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THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

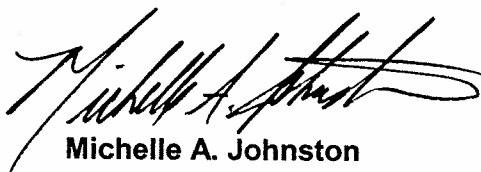
ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D0A290548

Dena Haverland

Dalton Utilities
1200 V.D. Parrot Jr. Parkway
Dalton, GA 30721



Michelle A. Johnston
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February 18, 2010

Case Narrative

D0A290548

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

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Sample Arrival and Receipt

The following report contains the analytical results for six samples received at TestAmerica Denver on January 29, 2010, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 2.6°C. No anomalies were encountered during sample receipt.

Standards

Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis

The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples

The Method Blank is processed reagent water spiked with internal standard and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with a mid level Laboratory Control Sample (LCS). The LCS recoveries were within established control limits, with the exception of the items noted in section Analytical Comments. The low-level LCS requirement changed on January 26, 2010.

Analytical Comments

Due to internal standard failures, samples River Water Finished and Freeman Springs Raw were re-extracted out of the laboratory prescribed hold time and reanalyzed in QC batch 0035178. Both batches have been included in this report. There is no prescribed regulatory holding time requirement for PFCs. The scientific literature indicates PFCs are highly persistent

compounds in the environment. TestAmerica Denver has conducted stability studies indicating medium- and low-level standard solutions of PFOA are stable for at least three months in glass, polystyrene, and polypropylene plastics at 4 ± 2 °C. The 7-day/40-day and 14-day/40-day holding times listed above are based on the general EPA convention for the holding time of extractable organic compounds in water and soil. Please note the sample results should be considered estimated.

The internal standard recovery for 13C2 PFDA associated with QC batch 0032159 was recovered below 53% in samples River Water Finished and Freeman Springs Raw. Upon re-extraction and reanalysis in QC batch 0035178, internal standard recovery outliers were still present in sample River Water Finished, demonstrating this anomaly is most likely due to matrix interference. Upon re-extraction and reanalysis in QC batch 0035178, internal standard recoveries were 100% in control for sample Freeman Springs Raw. Both the original and reanalysis data have been provided, as re-extraction was unavoidably performed outside the recommended sample holding time.

The LCS/LCSD associated with QC batch 0032159 exhibited relative percent difference (RPD) data outside the QC control limits for Perfluorododecanoic acid (PFDoA). The individual LCS and LCSD recoveries were acceptable; however the LCS was recovered at the high end of the recovery limit range and the LCSD was recovered at the low end of the recovery limit range, causing the RPD to be out of control. The acceptable LCS/LCSD analyte recoveries indicate that the laboratory performed the method within acceptable guidelines; therefore, corrective action is deemed unnecessary.

The method required MS/MSD could not be performed for QC batches 0032159, 0032160, and 0035178, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable mid-level LCS/LCSD analyses data.

The Standard Operating Procedure (SOP) was altered slightly for these samples in the sample prep and LC conditions. The alterations are listed below.

Solvents are now the same as they were in the original SOP and run per the following gradient: From 0 to 11 minutes, the flow rate is 0.4 mL/minute and the MeOH ramps up from 25% to 100%. From 11 to 11.01 minutes, the flow rate increases to 0.7 mL/minute and this flow is diverted from the MS. At 13 minutes the flow rate decreases back down to 0.4 mL/minute and 25% MeOH. The column then equilibrates to 14 minutes.

PFTriA and PFTeA now use 13C2 PFUnA as their internal standard instead of 13C2 PFDoA.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D0A290548

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
RIVER WATER FINISHED 01/26/10 08:37 002				
Perfluorohexanoic acid (PFHxA)	0.0033 J	0.020	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.0031 J	0.020	ug/L	DEN -LC-0012
MILL CREEK RAW 01/26/10 10:15 005				
Perfluorohexanoic acid (PFHxA)	0.0062 J	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB)	0.030	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.050	0.030	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.028	0.020	ug/L	DEN -LC-0012
MILL CREEK FINISHED 01/26/10 10:18 006				
Perfluorohexanoic acid (PFHxA)	0.0073 J	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB)	0.028	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.024 J	0.030	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.018 J	0.020	ug/L	DEN -LC-0012

METHODS SUMMARY

D0A290548

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN TestAmerica Laboratores, Denver, Facility Standard
Operating Procedure.

METHOD / ANALYST SUMMARY

D0A290548

<u>ANALYTICAL METHOD</u>	<u>ANALYST</u>	<u>ANALYST ID</u>
DEN -LC-0012	Teresa L. Williams	002510

References:

DEN TestAmerica Laboratores, Denver, Facility Standard
Operating Procedure.

SAMPLE SUMMARY

DOA290548

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LT06N	001	RIVER WATER RAW	01/26/10	08:35
LT06P	002	RIVER WATER FINISHED	01/26/10	08:37
LT06R	003	FREEMAN SPRINGS RAW	01/26/10	09:18
LT06T	004	FREEMAN SPRINGS FINISHED	01/26/10	09:22
LT06V	005	MILL CREEK RAW	01/26/10	10:15
LT06W	006	MILL CREEK FINISHED	01/26/10	10:18

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: RIVER WATER RAW

HPLC

Lot-Sample #....: D0A290548-001 **Work Order #....:** LT06N1AA **Matrix.....:** WATER
Date Sampled....: 01/26/10 08:35 **Date Received...:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date...:** 02/03/10
Prep Batch #....: 0032159 **Analysis Time...:** 01:37
Dilution Factor: 1
Method.....: DEN -LC-0012

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>MDL</u>
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
)				
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
A)				
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTEA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
A)				
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C4 PFOA	106	(60 - 155)
13C4 PFOS	73	(45 - 130)
13C4 PFBA	106	(36 - 130)
13C2 PFHxA	106	(55 - 135)
18O2 PFHxS	102	(61 - 130)
13C5 PFNA	87	(54 - 132)
13C2 PFDA	68	(53 - 130)
13C2 PFUnA	63	(37 - 130)
13C2 PFDoA	57	(26 - 130)

Dalton Utilities

Client Sample ID: RIVER WATER RAW

HPLC

Lot-Sample #....: D0A290548-001 Work Order #....: LT06N1AC Matrix.....: WATER
 Date Sampled....: 01/26/10 08:35 Date Received...: 01/29/10
 Prep Date.....: 02/01/10 Analysis Date...: 02/04/10
 Prep Batch #....: 0032160 Analysis Time...: 18:47
 Dilution Factor: 1
 Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (F OSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(37 - 130)

Dalton Utilities

Client Sample ID: RIVER WATER FINISHED

HPLC

Lot-Sample #....: D0A290548-002 **Work Order #....:** LT06P1AA **Matrix.....:** WATER
Date Sampled....: 01/26/10 08:37 **Date Received...:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date...:** 02/03/10
Prep Batch #....: 0032159 **Analysis Time...:** 01:52
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	0.0033 J	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	87	(60 - 155)
13C4 PFOS	58	(45 - 130)
13C4 PFBA	91	(36 - 130)
13C2 PFHxA	83	(55 - 135)
18O2 PFHxS	85	(61 - 130)
13C5 PFNA	72	(54 - 132)
13C2 PFDA	52 *	(53 - 130)
13C2 PFUnA	47	(37 - 130)
13C2 PFDoA	40	(26 - 130)

NOTE(S) :

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: RIVER WATER FINISHED

HPLC

Lot-Sample #....: D0A290548-002 Work Order #....: LT06P1AC Matrix.....: WATER
Date Sampled....: 01/26/10 08:37 Date Received...: 01/29/10
Prep Date.....: 02/01/10 Analysis Date...: 02/04/10
Prep Batch #....: 0032160 Analysis Time...: 18:52
Dilution Factor: 1
Method.....: DEN -LC-0012

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>MDL</u>
Perfluorooctane sulfonamide (F OSA)	ND	0.050	ug/L	0.0057

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
MeFOSA	54	(37 - 130)

Dalton Utilities

Client Sample ID: RIVER WATER FINISHED

HPLC

Lot-Sample #....: D0A290548-002 Work Order #....: LT06P2AA Matrix.....: WATER
 Date Sampled....: 01/26/10 08:37 Date Received...: 01/29/10
 Prep Date.....: 02/04/10 Analysis Date...: 02/09/10
 Prep Batch #....: 0035178 Analysis Time...: 19:48
 Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	0.0031 J	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	74	(60 - 155)
13C4 PFOS	62	(45 - 130)
13C4 PFBA	76	(36 - 130)
13C2 PFHxA	75	(55 - 135)
18O2 PFHxS	107	(61 - 130)
13C5 PFNA	58	(54 - 132)
13C2 PFDA	41 *	(53 - 130)
13C2 PFUnA	36 *	(37 - 130)
13C2 PFDoA	33	(26 - 130)

NOTE(S):

- * Surrogate recovery is outside stated control limits.
- J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS RAW

HPLC

Lot-Sample #....: D0A290548-003 Work Order #....: LT06R1AA Matrix.....: WATER
 Date Sampled....: 01/26/10 09:18 Date Received...: 01/29/10
 Prep Date.....: 02/01/10 Analysis Date...: 02/03/10
 Prep Batch #....: 0032159 Analysis Time...: 02:07
 Dilution Factor: 1
 Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTEA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	83	(60 - 155)
13C4 PFOS	50	(45 - 130)
13C4 PFBA	87	(36 - 130)
13C2 PFHxA	83	(55 - 135)
18O2 PFHxS	81	(61 - 130)
13C5 PFNA	62	(54 - 132)
13C2 PFDA	47 *	(53 - 130)
13C2 PFUnA	44	(37 - 130)
13C2 PFDoA	39	(26 - 130)

NOTE(S) :

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS RAW

HPLC

Lot-Sample #....: D0A290548-003 Work Order #....: LT06R1AC Matrix.....: WATER
 Date Sampled....: 01/26/10 09:18 Date Received...: 01/29/10
 Prep Date.....: 02/01/10 Analysis Date...: 02/04/10
 Prep Batch #....: 0032160 Analysis Time...: 18:57
 Dilution Factor: 1
 Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (F OSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(37 - 130)

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS RAW

HPLC

Lot-Sample #....: D0A290548-003 **Work Order #....:** LT06R2AA **Matrix.....:** WATER
Date Sampled....: 01/26/10 09:18 **Date Received...:** 01/29/10
Prep Date.....: 02/04/10 **Analysis Date...:** 02/09/10
Prep Batch #....: 0035178 **Analysis Time...:** 20:03
Dilution Factor: 1
Method.....: DEN -LC-0012

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>MDL</u>
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
)				
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
A)				
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTEA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
A)				
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C4 PFOA	76	(60 - 155)
13C4 PFOS	87	(45 - 130)
13C4 PFBA	75	(36 - 130)
13C2 PFHxA	77	(55 - 135)
18O2 PFHxS	108	(61 - 130)
13C5 PFNA	72	(54 - 132)
13C2 PFDA	58	(53 - 130)
13C2 PFUnA	55	(37 - 130)
13C2 PFDoA	47	(26 - 130)

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS FINISHED

HPLC

Lot-Sample #....: D0A290548-004 **Work Order #....:** LT06T1AA **Matrix.....:** WATER
Date Sampled....: 01/26/10 09:22 **Date Received...:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date...:** 02/03/10
Prep Batch #....: 0032159 **Analysis Time...:** 02:22
Dilution Factor: 1
Method.....: DEN -LC-0012

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>MDL</u>
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
)				
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
A)				
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTEA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
A)				
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C4 PFOA	92	(60 - 155)
13C4 PFOS	75	(45 - 130)
13C4 PFBA	92	(36 - 130)
13C2 PFHxA	85	(55 - 135)
18O2 PFHxS	89	(61 - 130)
13C5 PFNA	74	(54 - 132)
13C2 PFDA	74	(53 - 130)
13C2 PFUnA	76	(37 - 130)
13C2 PFDoA	78	(26 - 130)

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS FINISHED

HPLC

Lot-Sample #....: D0A290548-004 Work Order #....: LT06T1AC Matrix.....: WATER
 Date Sampled....: 01/26/10 09:22 Date Received...: 01/29/10
 Prep Date.....: 02/01/10 Analysis Date...: 02/04/10
 Prep Batch #....: 0032160 Analysis Time...: 19:02
 Dilution Factor: 1
 Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (F OSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	49	(37 - 130)

Dalton Utilities

Client Sample ID: MILL CREEK RAW

HPLC

Lot-Sample #....: D0A290548-005 Work Order #....: LT06V1AA Matrix.....: WATER
 Date Sampled....: 01/26/10 10:15 Date Received...: 01/29/10
 Prep Date.....: 02/01/10 Analysis Date...: 02/03/10
 Prep Batch #....: 0032159 Analysis Time...: 02:37
 Dilution Factor: 1
 Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
)				
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
A)				
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTEA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	0.0062 J	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
A)				
Perfluorobutane sulfonate (PFBS)	0.030	0.020	ug/L	0.0082
Perfluorooctanesulfonate	0.050	0.030	ug/L	0.013
Perfluorooctanoic Acid	0.028	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	84	(60 - 155)
13C4 PFOS	61	(45 - 130)
13C4 PFBA	89	(36 - 130)
13C2 PFHxA	85	(55 - 135)
18O2 PFHxS	86	(61 - 130)
13C5 PFNA	69	(54 - 132)
13C2 PFDA	56	(53 - 130)
13C2 PFUnA	49	(37 - 130)
13C2 PFDoA	39	(26 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: MILL CREEK RAW

HPLC

Lot-Sample #....: D0A290548-005 Work Order #....: LT06V1AC Matrix.....: WATER
Date Sampled....: 01/26/10 10:15 Date Received...: 01/29/10
Prep Date.....: 02/01/10 Analysis Date...: 02/04/10
Prep Batch #....: 0032160 Analysis Time...: 19:07
Dilution Factor: 1

Method.....: DEN -LC-0012

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>MDL</u>
Perfluorooctane sulfonamide (F OSA)	ND	0.050	ug/L	0.0057

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
MeFOSA	61	(37 - 130)

Dalton Utilities

Client Sample ID: MILL CREEK FINISHED

HPLC

Lot-Sample #....: D0A290548-006 **Work Order #....:** LT06W1AA **Matrix.....:** WATER
Date Sampled....: 01/26/10 10:18 **Date Received...:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date...:** 02/03/10
Prep Batch #....: 0032159 **Analysis Time...:** 02:52
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
)				
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
A)				
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTEA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	0.0073 J	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
A)				
Perfluorobutane sulfonate (PFBS)	0.028	0.020	ug/L	0.0082
Perfluorooctanesulfonate	0.024 J	0.030	ug/L	0.013
Perfluorooctanoic Acid	0.018 J	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	91	(60 - 155)
13C4 PFOS	75	(45 - 130)
13C4 PFBA	92	(36 - 130)
13C2 PFHxA	86	(55 - 135)
18O2 PFHxS	88	(61 - 130)
13C5 PFNA	81	(54 - 132)
13C2 PFDA	72	(53 - 130)
13C2 PFUnA	67	(37 - 130)
13C2 PFDoA	52	(26 - 130)

NOTE (S) :

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: MILL CREEK FINISHED

HPLC

Lot-Sample #....: D0A290548-006 Work Order #....: LT06W1AC Matrix.....: WATER
 Date Sampled....: 01/26/10 10:18 Date Received...: 01/29/10
 Prep Date.....: 02/01/10 Analysis Date...: 02/04/10
 Prep Batch #....: 0032160 Analysis Time...: 19:12
 Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (F OSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOA	51	(37 - 130)